

Notice of Allowability

Application No.

10/814,502

Examiner

Delma R. Flores Ruiz

Applicant(s)

FERMANN ET AL.

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/04/2005.
2. ☒ The allowed claim(s) is/are 1-31.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Species II, Figure 4, drawn to exemplary core pumped fiber MOPA in the reply filed on 11/04/2005 is acknowledged. The traversal is on the ground(s) that the applicant don't argument why is the election of species is with traverse. This is not found persuasive because these inventions are distinct for the reasons given above and the search required for species I, III-VIII is not required for species II, election of species for examination purposes as indicated is proper. See MPEP § 806.04(b) and (f); § 808.01 (a) and § 808.02.

The requirement is still deemed proper and is therefore made FINAL.

Claims 32 – 87 withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 11/04/2005.

Drawings

The examiner Delma R. Flores-Ruiz has considered the drawings submitted on 03/31/2004.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mark J. Gallagher on November 22, 2005.

The application has been amended as follows:

Cancel claims 32 – 87.

Allowable Subject Matter

Claims 1 – 31 are allowed.

The following is an examiner's statement of reasons for allowance: Claim 1 recites a master oscillator power amplifier structure including the specific structure limitation of a mode-locked fiber oscillator comprising a pair of reflective optical elements, *a fiber amplifier optically connected to said mode-locked fiber oscillator through a bi-directional optical connection such that light from said mode-locked fiber*

oscillator can propagate to said fiber amplifier and light from said fiber amplifier can propagate to said mode locked fiber oscillator, which is neither anticipated or disclosed nor suggested in any piece of available prior art, which is neither anticipated nor obvious over the prior art of record.

Claim 10 recites a method of producing laser pulse including the specific step structure limitation of propagating optical energy back and forth through a gain fiber by reflecting light from a pair of reflective elements on opposite ends of said gain fiber, *mode-locking said resonant optical modes to produce a train of pulses; propagating said train of optical pulses from said laser cavity through said one of said reflectors to a fiber amplifier along a bi-directional optical path from said laser cavity to said fiber amplifier; and amplifying said laser pulses in said fiber amplifier, which is neither anticipated or disclosed nor suggested in any piece of available prior art, which is neither anticipated nor obvious over the prior art of record.*

Claim 13 recites a fiber-based master oscillator power amplifier structure including the specific structure limitation of a mode-locked fiber oscillator comprising a resonant cavity, a fiber amplifier comprising a gain fiber; and *a bi-directional optical path between said mode-locked fiber oscillator and said fiber amplifier and wherein said mode-locked fiber oscillator comprise a first segment of fiber and said fiber amplifier comprise a second segment of optical fiber and said first and second segments form a*

substantially continuous length of optical fiber, which is neither anticipated or disclosed nor suggested in any piece of available prior art, which is neither anticipated nor obvious over the prior art of record.

Claim 20 recites a method of producing laser pulse including the specific structure limitation of mode-locking longitudinal modes of a laser cavity to produce laser pulses; propagating said laser pulses from said laser cavity to a fiber amplifier, receiving amplified spontaneous emission emitted from said fiber amplifier at said laser cavity, a first portion of said spontaneous emission entering said laser cavity; *and retro-reflecting a second portion of said amplified spontaneous emission from said laser cavity back to said fiber amplifier to cause said second portion to be directed away from said cavity toward said fiber amplifier*, which is neither anticipated or disclosed nor suggested in any piece of available prior art, which is neither anticipated nor obvious over the prior art of record.

Claim 27 recites a fiber master oscillator power amplifier structure including the specific structure limitation of a mode-locked fiber oscillator comprising a first portion of optical fiber and a pair of reflectors and a fiber amplifier comprising a second portion of optical fiber optically connected to said partially transmissive fiber reflector to receive said optical pulses from said mode-locked oscillator, said second portion of optical fiber having gain to amplify said optical pulses, *wherein said first portion of optical fiber, said*

partially transmissive fiber reflector, and said second portion of optical fiber comprise continuous path formed by optical fiber uninterrupted by non-fiber optical components, which is neither anticipated or disclosed nor suggested in any piece of available prior art, which is neither anticipated nor obvious over the prior art of record.

Claim 30 recites a master oscillator power amplifier structure including the specific structure limitation of a *mode-locked fiber oscillator comprising a pair of reflective optical elements that form an optical resonator, and a fiber amplifier optically connected to said oscillator through an optical connection to said partially transmissive Bragg fiber grating,* which is neither anticipated or disclosed nor suggested in any piece of available prior art, which is neither anticipated nor obvious over the prior art of record.

Claim 31 recites a master oscillator power amplifier structure including the specific structure limitation of mode-locked fiber oscillator comprising a pair of reflective optical elements that form an optical resonator, a *fiber amplifier optically connected to said oscillator through an optical connection to said at least one partially transmissive reflective optical elements; and a pump source optically connected to said mode-locked fiber oscillator and said fiber amplifier to pump said mode-locked fiber oscillator and said fiber amplifier,* which is neither anticipated or disclosed nor suggested in any piece of available prior art, which is neither anticipated nor obvious over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Delma R. Flores Ruiz whose telephone number is (571) 272-1940. The examiner can normally be reached on M - F.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Min Sun Harvey can be reached on (571) -272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

Art Unit: 2828

For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Delma R. Flores Ruiz
Examiner
Art Unit 2828



Min Sun Harvey
Supervisor Patent Examiner
Art Unit 2828

DRFR/MH
November 22, 2005